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SEMICONDUCTIVE ROTATION SENSOR

PUB. NO.: 61-139719 [JP 61139719 A]

PUBLISHED: June 27, 1986 (19860627)

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APPL. NO.: 59-260782 [JP 84260782]

FILED: December 12, 1984 (19841212)

INTL CLASS: [4] G01D-005/18

JAPIO CLASS: 46.1 (INSTRUMENTATION -- Measurement)

JOURNAL: Section: P, Section No. 515, Vol. 10, No. 334, Pg. 145,  
November 13, 1986 (19861113)

→ cite as  
JP 3-94926  
11/1991 →

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ABSTRACT

PURPOSE: To enhance sensitivity, by providing a slit to the central part of the beam in the vicinity of a cantilevered beam and forming piezoelectric resistor elements to both sides of the slit in parallel to the longitudinal direction of the cantilevered beam.

CONSTITUTION: When the signal with resonant frequency of a cantilevered beam 1 is applied to a semiconductive rotation sensor from an oscillator 7 through an electrode 4, the free end 2 of the cantilevered beam 1 vibrates at the resonant frequency. When the cantilevered beam 1 is rotated around a rotary axis to the direction shown by the arrow in this state, Coriolis' force shown by the arrow 10 is applied. This force is added to one side of a slit 6 as compression stress and added to the other side thereof as tensile stress. Because the slit 6 is provided to the central part of the cantilevered beam 1 and a piezoelectric resistor element is formed in parallel to the longitudinal direction of the cantilevered beam 1, deformation stress can be concentrated to the piezoelectric resistor element and the stress of a largely deformable part can be detected and, therefore, sensitivity can be enhanced.